

WHAT IS CLAIMED IS:

1. A liquid crystal display element including a pair of transparent substrates, a liquid crystal sandwiched between said pair of transparent substrates, and liquid crystal alignment films formed on liquid crystal side surfaces of said respective transparent substrates, wherein:

5 said liquid crystal alignment films are aligned dividedly by a dot and/or by a pixel, and liquid crystal alignment directions at two dots or more and/or at two pixels or more differ from each other so that it is possible to obtain a predetermined main viewing angle direction.

10 2. A liquid crystal display element including a pair of transparent substrates, a liquid crystal sandwiched between said pair of transparent substrates, and liquid crystal alignment films formed on liquid crystal side surfaces of said respective transparent substrates, wherein:

15 said liquid crystal alignment films are aligned dividedly by a dot, and liquid crystal alignment directions at two dots or more differ from each other so that it is possible to obtain a predetermined main viewing angle direction.

20 3. The liquid crystal display element according to claim 2, wherein said liquid crystal alignment directions at four dots differ from each other.

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30 4. The liquid crystal display element according to

claim 4, wherein said liquid crystal alignment directions at dots adjoining to each other differ from each other.

5. A liquid crystal display element including a pair of transparent substrates, a liquid crystal sandwiched between said pair of transparent substrates, and liquid crystal alignment films formed on liquid crystal side surfaces of said respective transparent substrates, wherein:

10        said liquid crystal alignment films are aligned dividedly by a pixel, and liquid crystal alignment directions at two pixels or more differ from each other so that it is possible to obtain a predetermined main viewing angle direction.

15        6. The liquid crystal display element according to claim 5, wherein said liquid crystal alignment directions at four pixels differ from each other.

20        7. The liquid crystal display element according to claim 5, wherein said liquid crystal alignment directions at pixels adjoining to each other differ from each other.

25        8. A method for manufacturing a liquid crystal display element including a pair of transparent substrates, a liquid crystal sandwiched between said pair of transparent substrates, and liquid crystal alignment films formed on liquid crystal side surfaces of said respective transparent substrates, said method comprising

30        the steps of:

            forming ultraviolet light responsive type liquid

crystal alignment films on said pair of transparent substrates;

irradiating said liquid crystal alignment films on said transparent substrates parallel to a reference plane

5 with a polarized ultraviolet ray dividedly by a dot so that liquid crystal alignment directions at two dots or more differ from each other for obtaining a predetermined main viewing angle direction so as to regulate an alignment direction of said liquid crystal; and

10 irradiating said transparent substrate, on which said liquid crystal alignment films irradiated with said polarized ultraviolet ray are formed, with said polarized ultraviolet ray dividedly by the dot for developing a pre-tilt angle after rotating said transparent substrate  
15 on said reference plane so that said transparent substrate turns to a direction different from its direction at the time of ~~said~~ irradiating said liquid crystal alignment films.

20 9. The method for manufacturing a liquid crystal display element according to claim 8, wherein said liquid crystal alignment directions at four dots differ from each other.

25 10. The method for manufacturing a liquid crystal display element according to claim 8, wherein said liquid crystal alignment directions at dots adjoining to each other differ from each other.

30 11. A method for manufacturing a liquid crystal display element including a pair of transparent

substrates, a liquid crystal sandwiched between said pair of transparent substrates, and liquid crystal alignment films formed on liquid crystal side surfaces of said respective transparent substrates, said method comprising

5 the steps of:

forming ultraviolet light responsive type liquid crystal alignment films on said pair of transparent substrates;

irradiating said liquid crystal alignment films on  
10 said transparent substrates parallel to a reference plane with a polarized ultraviolet ray dividedly by a pixel so that liquid crystal alignment directions at two pixels or more differ from each other for obtaining a predetermined main viewing angle direction so as to regulate an  
15 alignment direction of said liquid crystal; and

irradiating said transparent substrate, on which said liquid crystal alignment films irradiated with said polarized ultraviolet ray are formed, with said polarized ultraviolet ray dividedly by the pixel for developing a  
20 pre-tilt angle after rotating said transparent substrate on said reference plane so that said transparent substrate turns to a direction different from its direction at the time of said irradiating said liquid crystal alignment films.

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12. The method for manufacturing a liquid crystal display element according to claim 11, wherein said liquid crystal alignment directions at four pixels differ from each other.

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13. The method for manufacturing a liquid crystal

~~display element according to claim 11, wherein said liquid crystal alignment directions at pixels adjoining to each other differ from each other.~~

- 5        14. A method for manufacturing a liquid crystal display element including a pair of transparent substrates, a liquid crystal sandwiched between said pair of transparent substrates, and liquid crystal alignment films formed on liquid crystal side surfaces of said  
10      respective transparent substrates, said method comprising the steps of:

      forming ultraviolet light responsive type liquid crystal alignment films on said pair of transparent substrates;

- 15      irradiating said liquid crystal alignment films on said transparent substrates parallel to a reference plane with a polarized ultraviolet ray dividedly by a dot and/or by a pixel so that liquid crystal alignment directions at two dots or more and/or at two pixels or  
20      more differ from each other for obtaining a predetermined main viewing angle direction so as to regulate an alignment direction of said liquid crystal; and

- irradiating said transparent substrate, on which said liquid crystal alignment films irradiated with said  
25      polarized ultraviolet ray are formed, with said polarized ultraviolet ray dividedly by the pixel for developing a pre-tilt angle after rotating said transparent substrate so that said transparent substrate turns to a direction different from its direction at the time of said  
30      irradiating said liquid crystal alignment films.